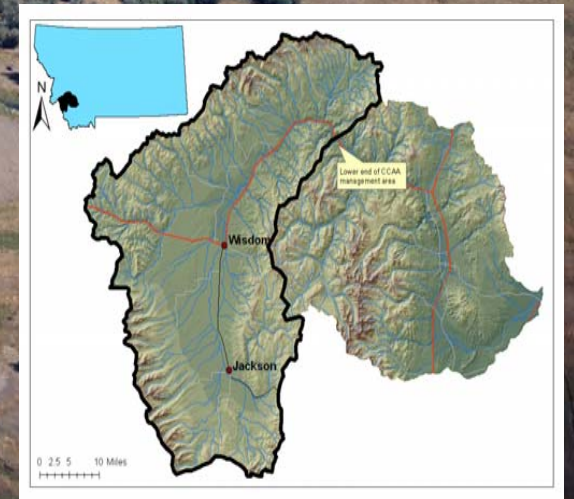


Drought Management, CCAA, and the Upper Big Hole River

Mike Roberts
Montana DNRC
August 2007

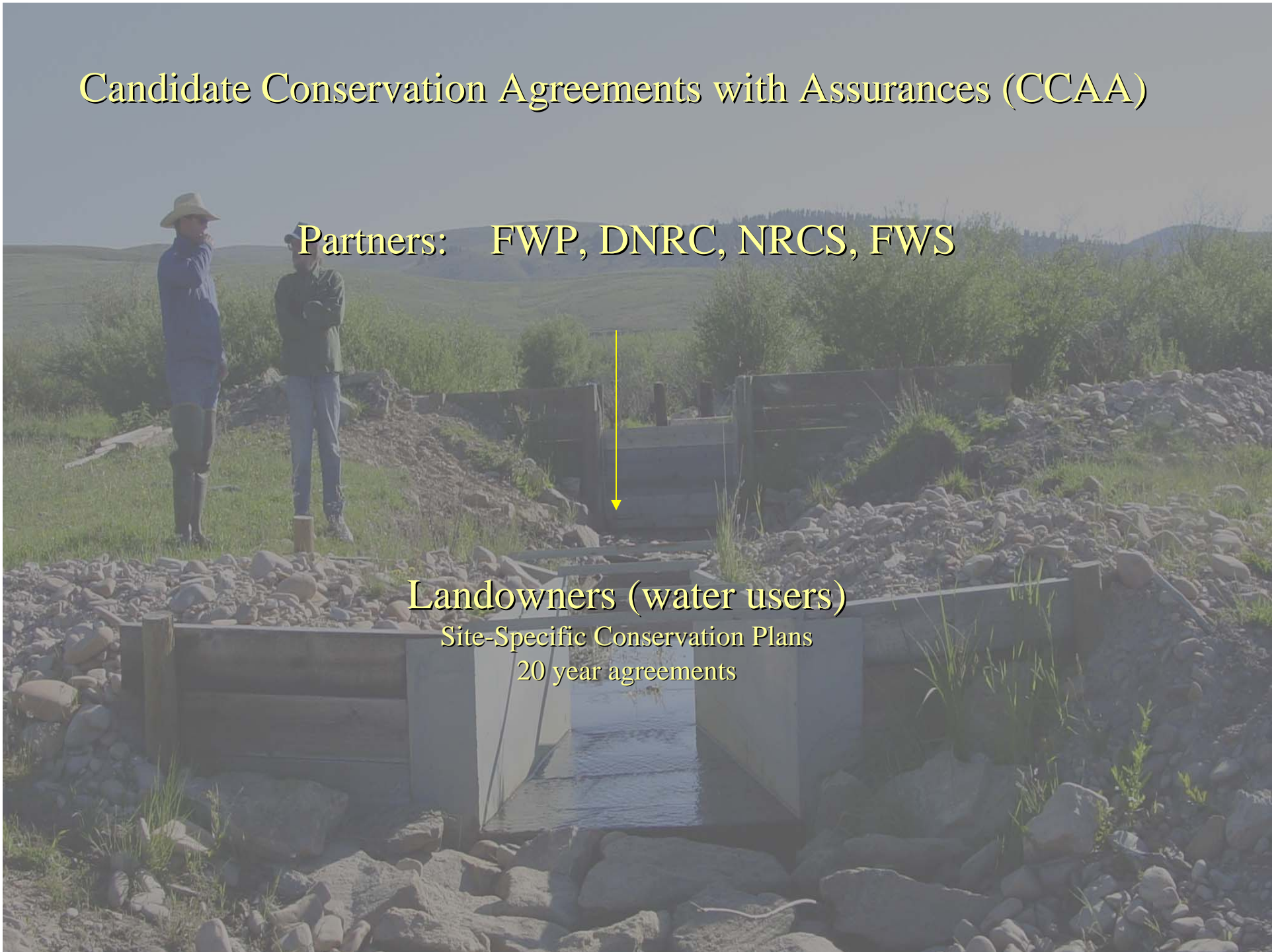


Candidate Conservation Agreements with Assurances (CCAA)

Partners: FWP, DNRC, NRCS, FWS

Landowners (water users)

Site-Specific Conservation Plans
20 year agreements





CCAA Conservation Guidelines

- Improve streamflows
- Improve and protect riparian habitats
- Identify and reduce or eliminate entrainment threats
- Remove migration barriers

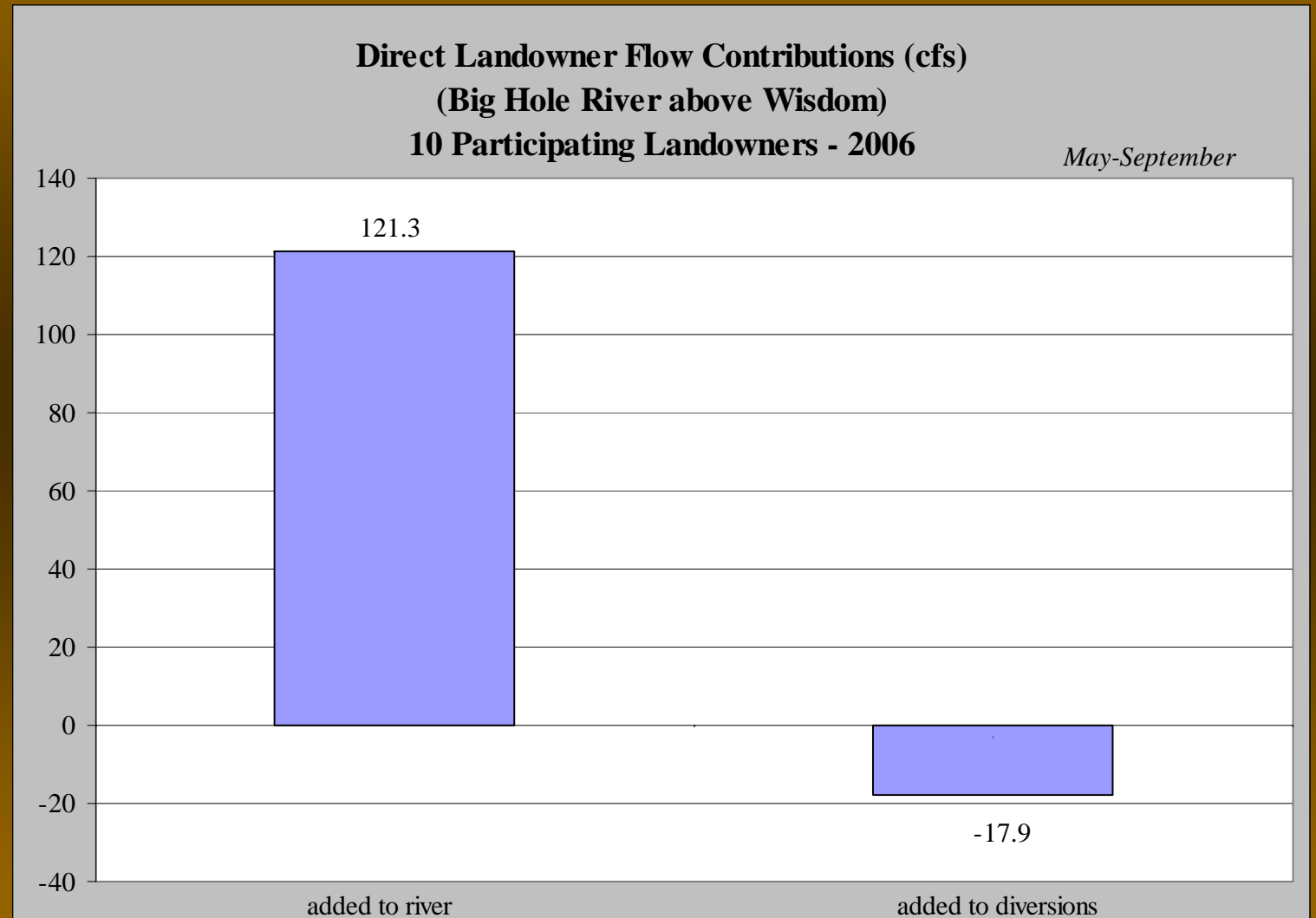
Maintaining/Improving River Flows

Pre-CCAA Approach

- BHWC Drought Plan (phone tree)
- Voluntary reductions
- Expedited EQIP (2004)



Voluntary Instream Flow Contributions



Maintaining/Improving River Flows

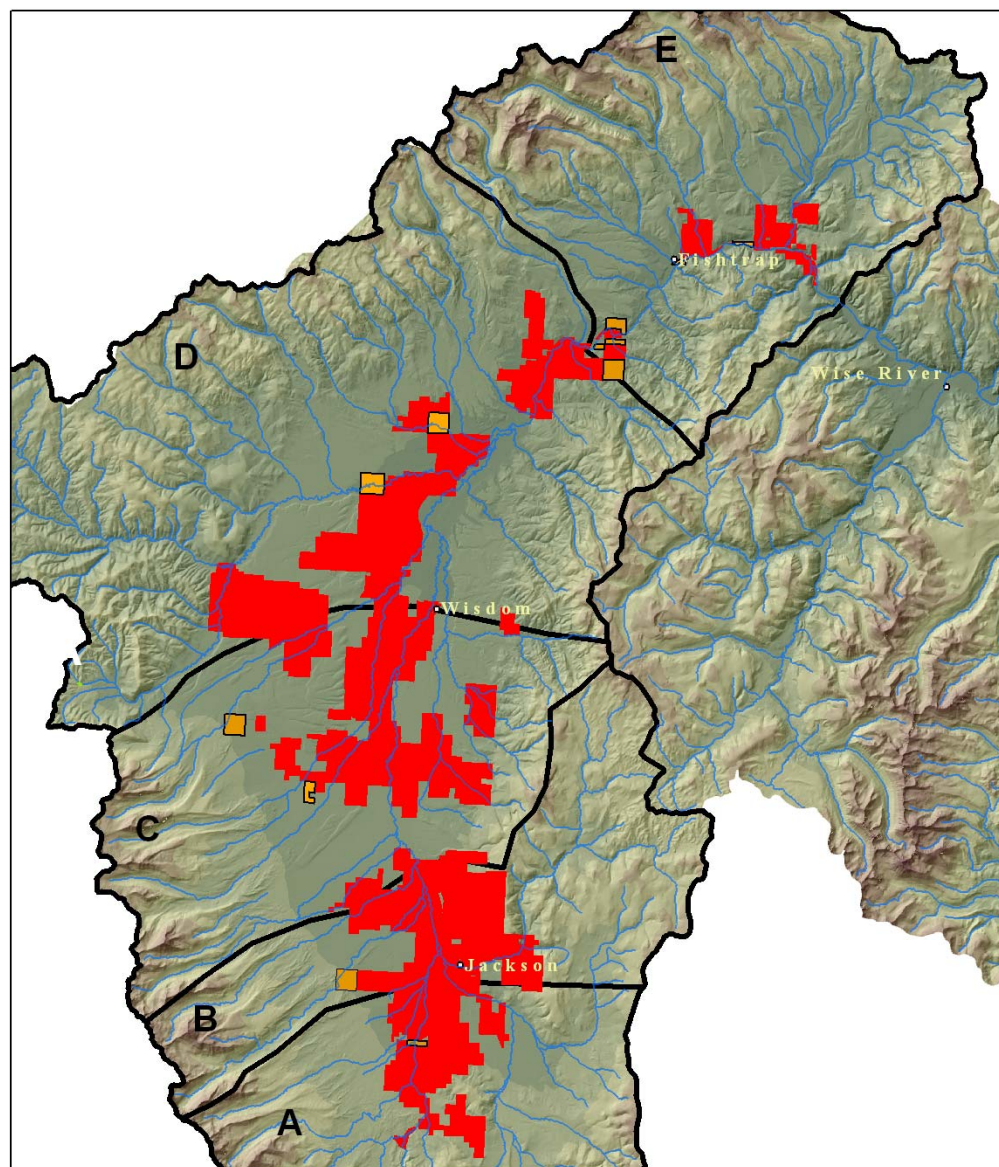
Pre-CCAA Approach

- BHWC Drought Plan (phone tree)
- Voluntary reductions
- Expedited EQIP (2004)

CCAA Approach (Site Specific Plans)

- Water rights compliance
 - infrastructure improvement
- Supplemental flow agreements
- Irrigation and stock water management
- Water use education
- Instream flow leasing



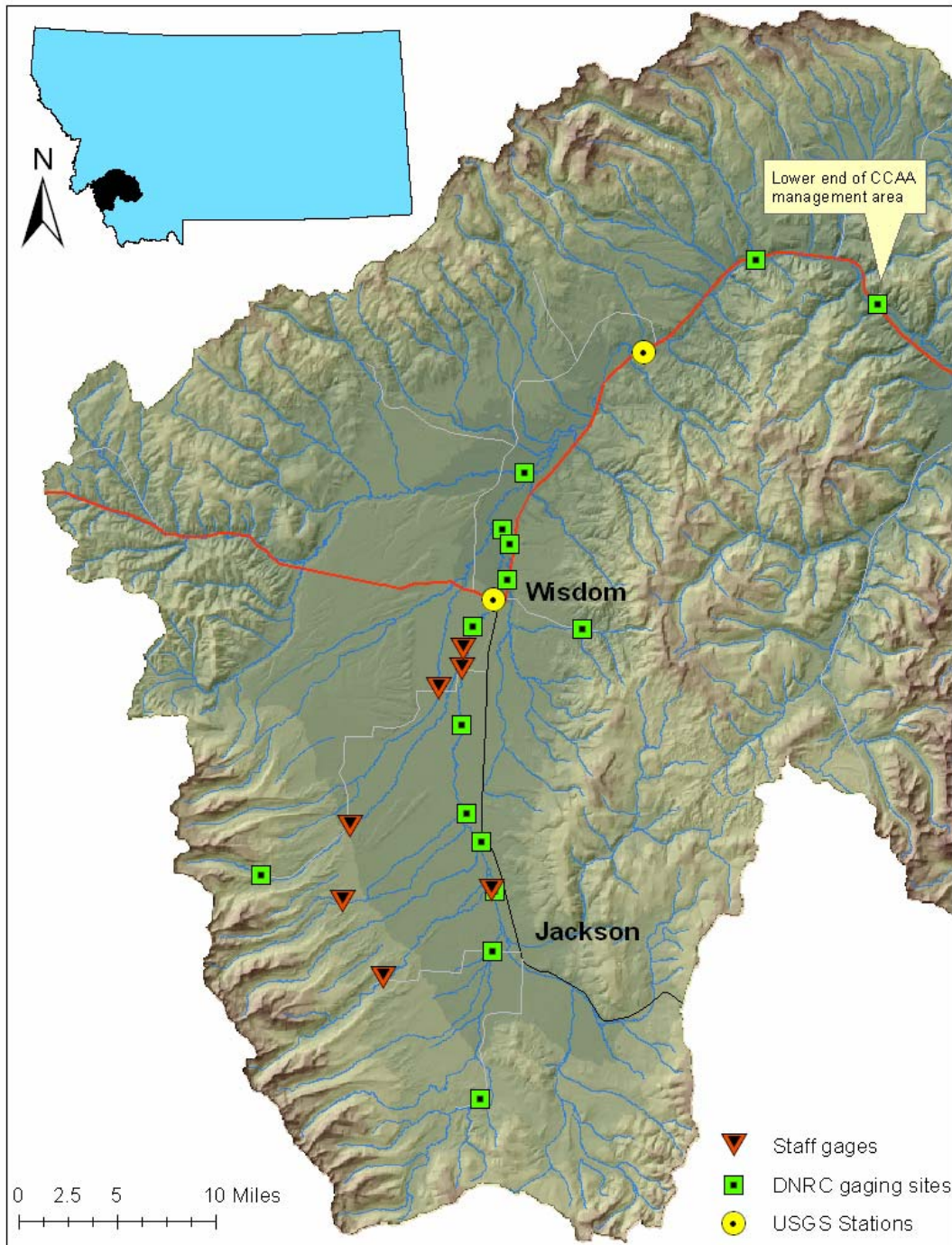


Legend

- Private Land Enrolled
- State Land Enrolled

Enrollment

- 31 landowners
- 157,189 acres enrolled



Gaging

2 USGS Stations

> 2 CCAA reaches

16 DNRC Continuous Stations

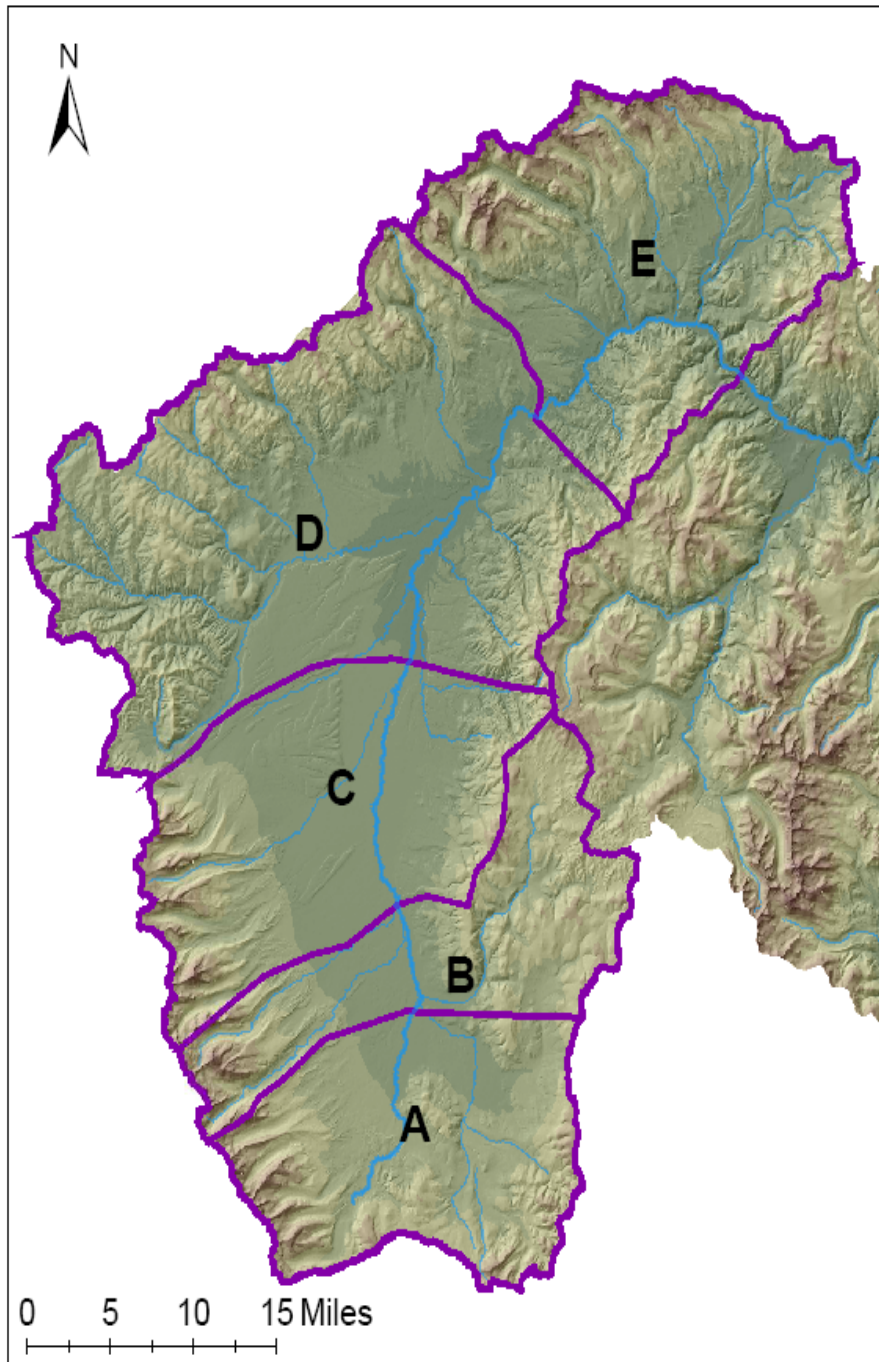
> 7 mainstem (3 CCAA reaches)

> 6 tributaries including CCAA required monitoring streams

> 3 ditches

7 rated staff gages





Flow Targets



CCAA Mgmt Segment	spring minimum flow goal (cfs)	summer/fall minimum flow goal (cfs)
A	60	20
B	100	40
C	160	60
D	350	100
E	450	170

Water Rights Compliance /Infrastructure Improvement

- 500 PODs
- Compliance/Non-compliance
(flow rate and period of use exceedances)
- Leaky Headgates
- Lack of/or poorly maintained
measuring devices
- Priority measuring device list



Supplemental Flow Agreements

April and May

Streamflows at the Wisdom Bridge (cfs)	Maximum Withdrawals at Big Diversion (cfs)
Above 300	100
300-201	75
200-161	50
160-60	20
60-41	10
40-0	0

Spring Runoff (May 25 – June 15)

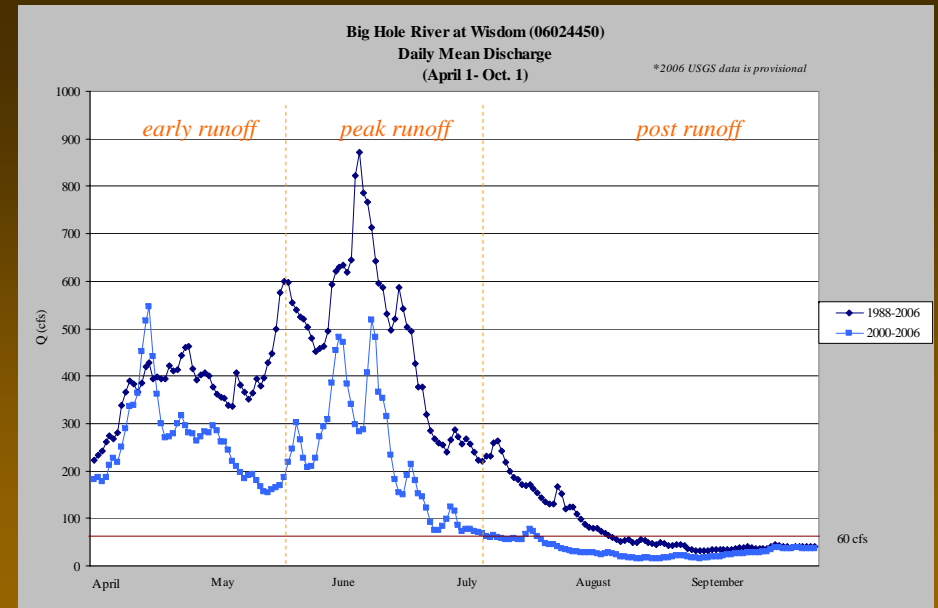
Streamflows at Wisdom Bridge (cfs)	Maximum withdrawals at Big Diversion (cfs)
1400 or greater	175
1300-1399	100
1200 - 1299	60
1000 - 1199	100
900 - 999	100
400 - 899	175
301 – 400	150
201 – 300	100
101 – 200	50
61 – 100	30
41-60	20
0-40	0

Summer – Fall (June 16-October 15)

Streamflows at Wisdom Bridge (cfs)	Maximum withdrawals at Big Diversion (cfs)
Greater than 400	175
400 - 301	150
300 - 201	100
200 - 101	50
100 - 61	30
60 - 41	20
40 - 0	0

Spring spawning flows,
Channel maintenance flows
Summer flows

CCAA Mgmt Segment	spring minimum flow goal (cfs)	summer/fall minimum flow goal (cfs)
A	60	20
B	100	40
C	160	60
D	350	100
E	450	170



Irrigation Water Management

- landowner control of diversion (headgates, measurement etc)
- increasing efficiency (improve on 15-20%)
- maintain production, meet demand, schedule diversions, shared use, system changes, supplemental flow agreements
- stock water tanks



